

WHAT IS CLAIMS IS:

1 A method for transmitting data between at least one
2 receiver operatively connected to at least one transmitter via at least one high-
3 speed link having a plurality of virtual channels, the method comprising the
4 steps of:

5 the receiver sending a virtual channel credit packet for a
6 particular virtual channel to the transmitter, said credit packet being indicative
7 that said receiver is available to receive data and having a unique virtual
8 channel number assigned to said particular virtual channel thereto;

9 the transmitter responding to said virtual channel credit packet
10 including transmitting data to the receiver if data is available; and,

11 the receiver receiving said data transmitted from the transmitter.

1 2. The method according to claim 1 wherein said virtual
2 channel credit packet is sent when the receiver has the available resources to
3 receive transmission data from the transmitter for said particular virtual
4 channel, and is ready to do so.

1 3. The method according to claim 1 wherein said data
2 includes said unique virtual channel number assigned to said particular virtual
3 channel.

1 4. The method according to claim 1 further comprising the
2 steps of repeating the process for the next virtual channel number until all
3 virtual channels are running.

1 5. The method according to claim 1 wherein prior to said
2 step of the receiver sending a virtual channel credit packet, further comprising
3 the steps of:

4 the receiver checking for available buffer for transmission;
5 the receiver waiting for a predetermined time if no buffer is
6 available; and,
7 the receiver sending said virtual channel credit packet for said
8 specific virtual channel once buffer is available.

1 6. The method according to claim 5 wherein said step of the
2 receiver waiting for a predetermined time further comprising the step of the
3 receiver repeating said step of the receiver checking for available buffer step
4 until a buffer is available.

1 7. The method according to claim 1 wherein said step of the
2 transmitter responding to said virtual channel credit packet further comprising
3 the steps of:

4 the transmitter checking for available buffer for said specific
5 virtual channel;
6 the transmitter waiting for a predetermined time if no buffer is
7 available; and,
8 the transmitter looking for said virtual channel credit packet from
9 the receiver if a buffer is available.

1 8. The method according to claim 7 wherein said step of the
2 transmitter waiting further comprising the step of the transmitter repeating said

3 step of the transmitter checking for an available buffer until a buffer is
4 available.

1 9. The method according to claim 7 wherein said step of the
2 transmitter looking for said virtual channel credit packet further comprising the
3 steps of:

4 the transmitter waiting for a predetermined time if said virtual
5 channel credit packet is not found; and,
6 the transmitter checking for available data for transmission if said
7 virtual channel credit packet is found.

1 10. The method according to claim 9 wherein said step of the
2 transmitter waiting further comprising the step of the transmitter repeating said
3 step of the transmitter looking for said virtual channel credit packet until said
4 virtual channel credit packet is found.

1 11. The method according to claim 9 wherein said step of the
2 transmitter checking for available data further comprising the steps of:

3 the transmitter waiting for a predetermined time if no data is
4 available; and,
5 the transmitter sending said data if data is available.

1 12. The method according to claim 11 wherein said step of the
2 receiver waiting further comprising the step of the receiver repeating step of
3 receiver checking for available data until data is available for transmission.

1 13. The method according to claim 11 wherein said step of the
2 transmitter sending said data further comprising the step of the transmitter
3 repeating the method according to claim 1 for the next virtual channel credit
4 number.

1 14. The method according to claim 1 wherein said step of the
2 receiver accepting said data further comprising the steps of:

3 the receiver checking if said data has been received from the
4 transmitter;

5 the receiver waiting for a predetermined time if said data has not
6 been received; and,

7 the receiver repeating the method according to claim 1 for the
8 next virtual channel number if said data has been received.

1 15. The method according to claim 14 wherein said step of the
2 receiver waiting further comprising the step of the receiver repeating said step
3 of the receiver checking until said data has been received from the transmitter.

1 16. A system for transmitting data packets between at least
2 one receiver operatively connected to at least one transmitter via at least one
3 high-speed link having a plurality of virtual channels, said system comprising:

4 means for sending a virtual channel credit packet for a particular
5 virtual channel to the transmitter, said credit packet being indicative that said
6 receiver is available to receive data packet;

7 means for responding to said virtual channel credit packet and
8 transmitting at least one data packet to said credit packet sending means;

9 means for accepting said at least one data packet from said data
10 packet transmitting means; and,

11 said virtual channel credit packet having a unique virtual channel
12 number assigned to said particular virtual channel.

1 17. A system for transmitting data packets between at least
2 one receiver operatively connected to at least one transmitter via at least one
3 high-speed link having a plurality of virtual channels, said system comprising:

4 the receiver being adapted to send a virtual channel credit packet
5 for a particular virtual channel to the transmitter, said credit packet being
6 indicative that said receiver is available to receive data packets;

7 the transmitter being adapted to respond to said virtual channel
8 credit packet and transmit at least one data packet to the receiver;

9 the receiver being adapted to accept said at least one data packet
10 transmitted from the transmitter; and,

11 said virtual channel credit packet having a unique virtual channel
12 number assigned to said particular virtual channel.

1 18. A system according to claim 17 wherein said credit packet
2 is further indicative of the receiver having an available buffer of sufficient
3 capacity to receive a data packet from the transmitter.